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MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 1, 2022/2023 [TERM ID 2210 & TERM ID 2215]

HAP1011 – HUMAN ANATOMY AND PHYSIOLOGY

(All section / Groups)

17 FEBRUARY 2023

9:00 a.m. – 11:00 a.m

(2 Hours)

INSTRUCTIONS TO STUDENTS

1. This Question paper consists of **5 pages** with **4 Questions** only.
2. Attempt **ALL FOUR** questions. All questions carry equal marks and the distribution of the marks for each question is given.
3. Please print all your answers in the Answer Booklet provided.
4. You can use calculator in the examination.

Answer ALL questions [40 marks, 10 marks each]

QUESTION 1

- (a) Which feedback mechanism causes the variable to deviate further and further from its original value or range? [0.5 mark]
- (b) Which body system would be most affected by a lower than normal atmospheric pressure? [0.5 mark]
- (c) What two directional terms indicate “the back” in humans? [1 mark]
- (d) List TWO functions of the muscular system. [1 mark]
- (e) Describe briefly TWO changes on integumentary system due to aging. [1 mark]
- (f) What is the relationship between sunlight and melanin? [1 mark]
- (g) Compare the function of the organic materials in the bone matrix with the function of the inorganic materials in the matrix. [1 mark]
- (h) What is the function of the lumbar curvature? [1 mark]
- (i) What is the difference between isotonic and isometric contraction? [1 mark]
- (j) Compare red and white muscles relative to their speed of action and endurance. [2 marks]

Continued...

QUESTION 2

- (a) Describe TWO benefits of myelin-coated neurons as compared to those without myelin-coated when it comes to responding to stimuli. [2 marks]
- (b) What does the white matter in the spinal cord do during exercise? [1 mark]
- (c) What are TWO functions of cerebellum? [1 mark]
- (d) What is the barrier that guards against brain damage by preventing entry of harmful chemicals? [0.5 mark]
- (e) Sashi is having a gymnastic training on balance beam. Which part of the ear is helping Sashi is securing the balance on the beam? [0.5 mark]
- (f) Why are prebiotics good for the body? [1 mark]
- (g) What are the differences between astigmatism and hyperopia in terms of the focal point and corrective lenses worn. [2 marks]
- (h) Assume you have been chewing a piece of bread for 5 or 6 minutes. How would you expect its taste to change during this time? Why? [1 mark]
- (i) Describe TWO reasons why it is necessary for the stomach contents to be so acidic (pH 2.0). [1 mark]

Continued...

QUESTION 3

- (a) What roles do luteinizing hormones (LH) and follicle stimulating hormones (FSH) play in the male reproductive system? [1 mark]
- (b) Why don't sperm and urine mix when they pass through the urethra during ejaculation? [1 mark]
- (c) What causes menstrual cramps? [1 mark]
- (d) When do the fingers and toes develop during the human embryo's development? [1 mark]
- (e) What is the function of oxytocin during labor? [0.5 mark]
- (f) What circumstances does the human body produce melatonin? [0.5 mark]
- (g) What are TWO reactions that triggered on by the binding of hormones to their receptors? [1 mark]
- (h) What are THREE examples of non-specific defenses against a pathogen attack? [1.5 mark]
- (i) What are THREE functions of lymphatic system? [1.5 marks]
- (j) What are TWO roles of cortisol during prolonged exercise? [1 mark]

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QUESTION 4

- (a) Describe briefly TWO functions of larynx. [1 mark]
- (b) During the process of inspiration, what happen to the diaphragm, external intercostal muscles, alveolar volume and alveolar pressure? [2 marks]
- (c) Why is vital lung capacity important? What condition has an abnormal low vital capacity? [1 mark]
- (d) The duration of time spent underwater can be extended by hyperventilating before swimming. Describe how that might occur. [1 mark]
- (e) What is the main function of platelets? [0.5 mark]
- (f) What happens to end-diastolic volume and heart contractility when stroke volume increases? [1 mark]
- (g) What is the primary natural pacemaker of the heart? [0.5 mark]
- (h) What are THREE factors influencing venous return? [1.5 marks]
- (i) Where is hypertonic urine formed? [0.5 mark]
- (j) What is the function of countercurrent multiplication in the kidneys? [1 mark]

End of paper